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4. (Twice Amended) A purified DNA having the nucleotide sequence of SEQ ID NO:2.
  5. (Twice Amended) A purified DNA having a nucleotide sequence with one or more nucleotide substitutions relative to the nucleotide sequence of SEQ ID NO:2 which encodes a protein having the amino acid sequence of SEQ ID NO:1.

### REMARKS

Initially, Applicants thank the Examiner for withdrawing the previous rejections of record as noted on Page 2-3 of the Official Office Action.

Applicants also express appreciation for the acknowledgment of receipt of the certified copy of priority document Japanese Application No. 11-288372, filed June 27, 2002.

Applicants again note that a Form PTO-948, indicating the Draftsperson's approval was not included with the Office Action, and Applicants respectfully request that Examiner include this paper in the next communication from the U.S.P.T.O.

Reconsideration and withdrawal of the restriction requirement and rejections of record are respectfully requested.

### *Summary of Status of Amendments and Office Action*

In the present amendment, claims 4-5 are amended and claims 8-10 are canceled. Claims 1 and 2 have been withdrawn from consideration in light of the Restriction Requirement dated

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November 1, 2001. Therefore, claims 3-6 remain pending in the application with claims 3-6 being independent.

In the Office Action, claims 3-6 and 8-10 are rejected.

Claims 3-6 and 8-10 are rejected under 35 U.S.C. § 112, first paragraph, as not being enabled.

Claims 5, 8 and 10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 3-6 and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wang et al.

***Explanation and Support for Amendments***

Applicant submits that each of the foregoing amendments is fully supported by the specification and/or was suggested by the Examiner.

***Response to Restriction Requirement***

Applicants again note that the Examiner has made the Restriction Requirement final. However, Applicants are allowing the non-elected claims to remain pending until such time as an indication of allowability is received in this application.

***Response to § 112, first paragraph Rejections***

Claims 3-6 and 8-10 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for a full length DNA set forth in SEQ ID NO:2 encoding the protein of SEQ ID NO:1, does not reasonably provide enablement for all mutants or fragments

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generated from any position located on the sequence of SEQ ID NOs:1 or 2.

In response, Applicants note that claims 3, 4 (as amended) and 6 do not claim “mutants or fragments” of SEQ ID NOs:1 or 2. Claim 3 and 4 are directed to the “enabl[ed] . . . full length DNA set forth in SEQ ID NO:2.” Claim 6 is directed to a specific DNA sequence within the “enabl[ed] . . . full length DNA set forth in SEQ ID NO:2.” It is clear that the Office Action misunderstands these claims, which are most definitely not “mutants or fragments” of SEQ ID NO:2, but are SEQ ID NO:2 or a well defined segment thereof. Applicants respectfully request that the Examiner withdraw the rejection of claims 3, 4 and 6 in light of these misunderstandings and the amendment of claim 4.

With respect to the rejection of claim 5, Applicants note that the Office Action states that the specification fails to provide any specific description of the structure and function of mutants generated. In response, Applicants have now amended the language to more clearly set forth the invention and point out that the claimed DNA would still have the same amount of nucleotides as that claimed in claim 3, and would encode the protein having SEQ ID NO:1, and therefore, retain the same function. Applicants respectfully submit that, as amended, one of ordinary skill in the art, having the DNA sequence set forth in SEQ ID NO:2 and using a DNA code table, would be able to practice the claimed invention by substituting nucleotides in the sequence of SEQ ID NO:2 such that the final protein encoded would still have the amino acid sequence set forth in SEQ ID NO:1. Applicants note that the Office Action stated that this argument was rejected because “the claim reads 1-10 nucleotides deleted, substituted, inserted or added” which would require one of ordinary

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skill in the art to “generate an unspecified number of mutants . . . then characterize those mutants to determine if they have the property to interact with cAMP-GEFII.” However, as amended, one of ordinary skill in the art would not need to do this. There is no need to characterize the function of the final mutated DNA sequence because by definition, an amino acid sequence as set forth in SEQ ID NO:1 will have the same function regardless of the DNA sequence encoding that amino acid sequence.

In view of the above, Applicants respectfully request that these grounds of rejection be withdrawn, and claims 3-6 be allowed. Applicants respectfully submit that this amendment is a clarifying amendment which does not narrow the scope of the claimed invention.

***Response to § 112, second paragraph Rejection***

Claims 5, 8 and 10 are rejected under 35 U.S.C. § 112, second paragraph because of the phrase “with one to ten nucleotides deleted, substituted, inserted, or added relative to the nucleotide sequence set forth in SE ID NO:2.” The Office Action asserts that the position of these nucleotides is not clear, nor is it clear if the combination includes only 1 to 10 mutations, or some combination thereof.

In response, Applicants note the amended language and respectfully submit that it is not necessary to set forth the identity or location of the substitutions, because one of ordinary skill in the art would understand that if, for instance, the DNA sequence contains the codon TAT, encoding tyrosine, then the sequence can be substituted with TAC and still code for tyrosine. Any other

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substitution of this codon would not give tyrosine at that location in the final amino acid sequence. Applicants also note that as amended, the claim now recites “one or more nucleotides substituted,” thereby rendering the second basis of the rejection moot. Therefore, Applicants submit the rejection is moot and respectfully request that the Examiner withdraw this rejection.

***Response to §§ 102(b) Rejection***

Claims 3-6 and 8 are rejected under 35 U.S.C. § 102(b) as anticipated by Wang et al. (Nature, vol. 388, pp. 593-598, 1997). Applicants respectfully submit that claims 3-6 do not read on Wang et al. because Wang discloses a DNA encoding 1553 amino acids, whereas Applicants claimed DNA sequences encode 1590 amino acid. As the Examiner is aware, for a rejection under 35 U.S.C. § 102(b) to be proper, each element of the claim must be found in the alleged prior art reference. Therefore, as Wang does not disclose every limitation of the claims, Applicants submit the rejection is moot and respectfully request that the Examiner withdraw this rejection. Further, Applicants note that Wang does not suggest the claimed invention and is therefore an insufficient basis for any obviousness rejection under 35 U.S.C. § 103.

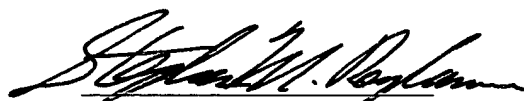
**CONCLUSION**

For the reasons advanced above, Applicants respectfully submit that all pending claims patentably define Applicants' invention. Allowance of the application with an early mailing date of the Notices of Allowance and Allowability is therefore respectfully requested.

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If any issues remain which can be expeditiously resolved by a telephone conference, or if the Examiner has any questions concerning this matter or the application, the Examiner is respectfully invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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**MARKED UP COPY OF AMENDED CLAIMS**

4. (Twice Amended) A purified DNA having [a] the nucleotide sequence of SEQ ID NO:2.
5. (Twice Amended) A purified DNA having a nucleotide sequence with one [to ten] or more [nucleotides deleted, substituted, inserted or added] nucleotide substitutions relative to the nucleotide sequence of SEQ ID NO:2 [and encoding the] which encodes a protein having the amino acid sequence of SEQ ID NO:1.